FIDO

Case study: Thames Water, UK

FIDO AI is an innovative software-as-a-service (SaaS) technology which uses deep-learning neural networks to analyse acoustic and kinetic data from any sensor device to find the water leaks that matter.

Step 1: Generate points of interest
FIDO AI instantly analyses files at scale, and delivers leaks, ranked by size, to more than 92% accuracy

Step 2: Generate points of evidence
Use on site to enhance your existing equipment and narrow down leak position to under 1m

Step 3. Deliver proof of leak resolution
Track activities for auditable end-to-end proof of leak resolution

Leak team gets total success from FIDO-led work orders

Thames Water trials FIDO analysis as part of leakage drive and achieves over 92% accuracy.

Thames Water

35,054
Historic files analysed in 2.5 hours

92%
FIDO AI accuracy

20
Leaks validated in six days

11
Misaligned loggers flagged for maintenance

The Challenge

With 10 million water customers across London and the Thames Valley, Thames Water has a massive water supply infrastructure to manage.

A target of reducing reportable leakage by 20% between 2020 and 2025 means leakage detection and repair is a major focus for the company.

Thames approached FIDO Tech to help target leakage in a defined region due to increasing challenges around the identification, verification and successful repair of leaks.

The company also wanted to evaluate whether to retain, maintain and expand its existing logger estate of 27,000 devices that is nearing renewal.

The Solution

A four-week trial was set up with Thames' Leakage Strategy Team to demonstrate the value of the FIDO service. The objective was to show how FIDO AI and FIDO<1 hardware can deliver accurate, objective results with a clear call to action and take leakage teams within 1m of leaks.

The first step was to run the past four months' worth of acoustic logger records through the FIDO AI algorithm and classify each point of interest (POI) as either a leak, possible leak or non-leak.

The results identified two DMAs that were of particular concern. Over a two-week period, FIDO leakage engineers accompanied two of Thames' leakage detection service providers, Hydrosave and RPS, to visit as many POIs in the two DMAs as possible.

The Results

FIDO AI analysed over 35,000 historic sound files in 2.5 hours and returned a report which Thames Water retrospectively followed up with its own leakage repair records and dig data. We then carried out analysis of Thames Water's entire logger estate, an additional 6,810 new acoustic files.

From daily reports, Thames identified 33 POIs for on-site verification by its leakage detection service providers and FIDO staff. Of these, 11 led to the discovery of misaligned loggers, and 20 were correctly confirmed as leaks or not leaks (including four customer side leaks), an accuracy of over 92%.

Post-trial analysis showed 13 successful digs out of 13 work orders raised. FIDO AI also identified additional POIs which would not have been flagged for investigation using Thames' traditional detection methods. All new logger alarm files were processed by FIDO AI overnight to provide a start-of-day report showing new leaks over the full trial period. This allowed Thames Water to create their own logic table of POIs and therefore target, plan and schedule POI visits with greater accuracy.

FIDO also helped demonstrate that the company's current acoustic loggers were an important and integral part of their leakage process that would support their future leakage strategy.

> " We undertook this trial to directly compare the results of applying the FIDO AI with that produced using our existing analysis of the data from our permanent acoustic loggers. Applying the FIDO AI gave us a step change improvement in the confidence with which we could correctly predict the presence of a leak from our acoustic loggers. This would ensure we would not be missing leaks whilst maximising the efficiency of the follow-on activity in the field . "
>
> **Andrew Oakes**
> **Leakage Strategy and Development Manager,**

Try FIDO on your network

To access our free online demo, arrange a trial or speak to one of the team,
please contact **sales@fido.tech** or call us on **+44 (0) 1869 929001**.

www.fido.tech

Eco Business Centre, Charlotte Avenue, Elmsbrook, Bicester, OX27 8BL